Sandia National Laboratories

Gas Diffusion Electrodes for Fuel Cells

BENEFITS

- Advanced Materials
- Power & efficiency gains
- Smaller scale
- Reduced cost

APPLICATIONS

- Electronics/Microelectronics
- Portable Power Supply
- Storage Battery
- Transportation/Automotive

PATENTS PENDING

- SD 11172

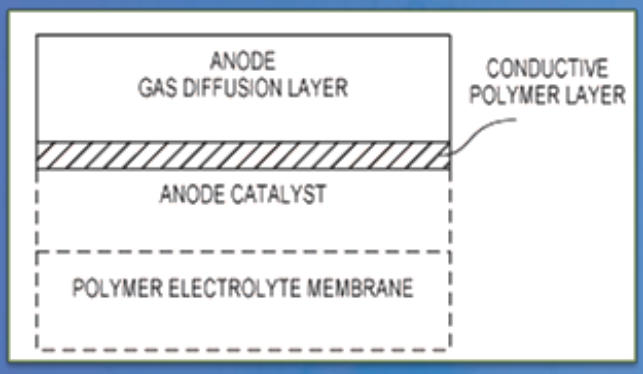
LICENSING & PARTNERING

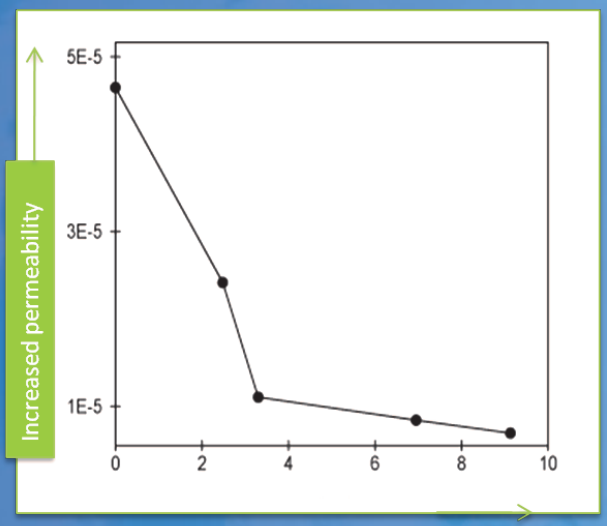
Various licensing and partnering options are available.

Please contact the Intellectual Property Department to discuss.

Technology Summary

Direct methanol fuel cells have an advantage over hydrogen fuel cells because the liquid methanol has high energy density and is easily transportable. However, one of the challenges with this process has been the large amount of methanol that crosses over from the anode to the cathode side of the membrane electrode assembly. This crossover poisons the cathode, decreasing operating voltage and weakening the power output of the cell. Sandia researchers have developed a method for mitigating the methanol crossover poisoning effect in fuel cells. This unique gas diffusion electrode technique results in little to no leftover methanol, therefore increasing the overall effectiveness and performance of the fuel cells.





Technology Readiness Level

Sandia estimates the technology readiness level (TRL) at 4. Key elements of the technology have been demonstrated in relevant laboratory environments.

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National Nuclear Security Administration

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